

## **REMARKS/ARGUMENTS**

The Applicant thanks the Examiner for the Office Action dated December 28, 2006.

### **Amendments**

The description has been amended at page 17 so as to explicitly incorporate cross-referenced subject-matter from page 12, lines 4-7 of cross-referenced US Application No. 10/302,274.

The independent claims have, likewise, been amended to include this cross-referenced material.

### **Claim Rejections – 35 USC § 102(a)**

The Applicant maintains that the subject-matter of claims 1, 13 and 25 is not anticipated by the disclosure of Torpey. Torpey describes a typical low-resolution printhead comprising a nozzle unit **18** attached to chamber unit **16**, and reservoir unit **19** supplying ink to the rear of the chamber unit (see Figure 2 of Torpey). A carrier bar **32** contains piezoelectric actuators **28**, which are positioned to move a diaphragm in the roof of the chamber unit **16**, thereby to eject ink from the nozzle unit **18**.

An electric lead **34** is connected to each piezoelectric actuator **28**. The wire lead is connected to a microprocessor controller, which presumably contains drive circuitry for individually addressing each piezoelectric actuator.

The printhead specified in claim 1 is clearly distinguished from the printhead described in Torpey by virtue of the multi-layer substrate on which the nozzles are mounted. Torpey fails to describes a plurality of nozzles mounted on a passivation layer of a multi-layer substrate, which multi-layer substrate comprises a silicon substrate with drive transistors and CMOS interconnect layers formed thereon.

For at least these reasons, the Applicant submits that the independent claims of the present application are not anticipated by Torpey.

### **Claim Rejections – 35 USC § 103**

It is further submitted that the present invention is not obvious in view of Torpey either. Torpey merely represents traditional prior art for low-resolution piezoelectric printheads. Torpey teaches construction of such printheads from moldable plastics or machinable ceramics.

However, the present invention relates to printheads, which are formed from a silicon wafer substrate. Hitherto, it had not been suggested in the prior art to construct a printhead by forming ceramic nozzle chambers on a passivation layer of a silicon substrate, wherein the passivation layer covers drive transistors and CMOS interconnect layers. Moreover, Torpey does not provide this suggestion to the person skilled in the art.

Usually, MEMS printheads have nozzle chambers defined within the silicon wafer substrate. In the present invention the nozzle chambers are mounted on a passivation layer of a multi-layer substrate comprising drive transistors and CMOS interconnect layers. There is nothing

in Torpey teaching the skilled person to make this modification to MEMS inkjet printheads. Accordingly, it is submitted that the present invention is not obvious in view of Torpey.

It is respectfully submitted that all of the Examiner's objections have been successfully traversed. Accordingly, it is submitted that the application is now in condition for allowance. Reconsideration and allowance of the application is courteously solicited.

Very respectfully,

Applicant/s:



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